

California  
FUEL CELL  
PARTNERSHIP



DRIVING FOR THE FUTURE



# Moving toward a commercial market for hydrogen fuel cell vehicles

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# Happy Drivers











## 26 stations



## Future stations





## Transition

Today – 250 vehicles  
+ 26 stations

**How we  
get there  
from here**

2015-17 – 10,000s  
vehicles + 100s stations



## Rollout Strategy

- Concentrate on key early market regions
  - Los Angeles and San Francisco/Sacramento areas
- Cluster stations and vehicles
  - To maximize station utilization and vehicle support
- Coordinate multiple uses where possible
  - e.g. passenger car fueling with transit buses, forklifts, stationary power generation
  - leverage limited infrastructure for efficiency and cost benefits



## Funding and Support Needed

1. Government support for the first hydrogen stations (including ensuring that hydrogen is less expensive than gasoline), is needed to offset risks, both to the station owner and the vehicle owner **(offset high capital/lower throughput for owner, support lower per mile cost of fuel than gasoline to driver)**
2. Possible station support approaches:
  - Cost share stations through one time grants
  - Provide incentives for fuel qty dispensed
  - Offer incentives to station owners (ie tax credits)

(from CAFCP vision document)

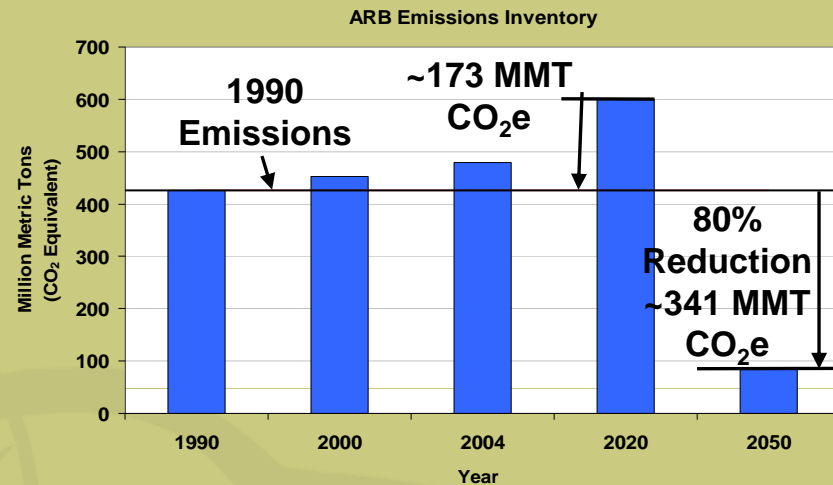
# Why FCVs?



**Zero tailpipe pollution**



**Sustainable, domestic  
fuel**



**Reduce GHGs**



**Vehicles people want to drive**

## Why hydrogen?

**Hydrogen** is the most abundant element in the universe

- Excellent energy carrier
- Nonpolluting
- Economically competitive
- As safe as gasoline
- Produced in any country from a variety of energy sources



## Well-to-wheels

### 2012 Fuel Cell Hybrid (H<sub>2</sub> from Natural Gas)

Energy

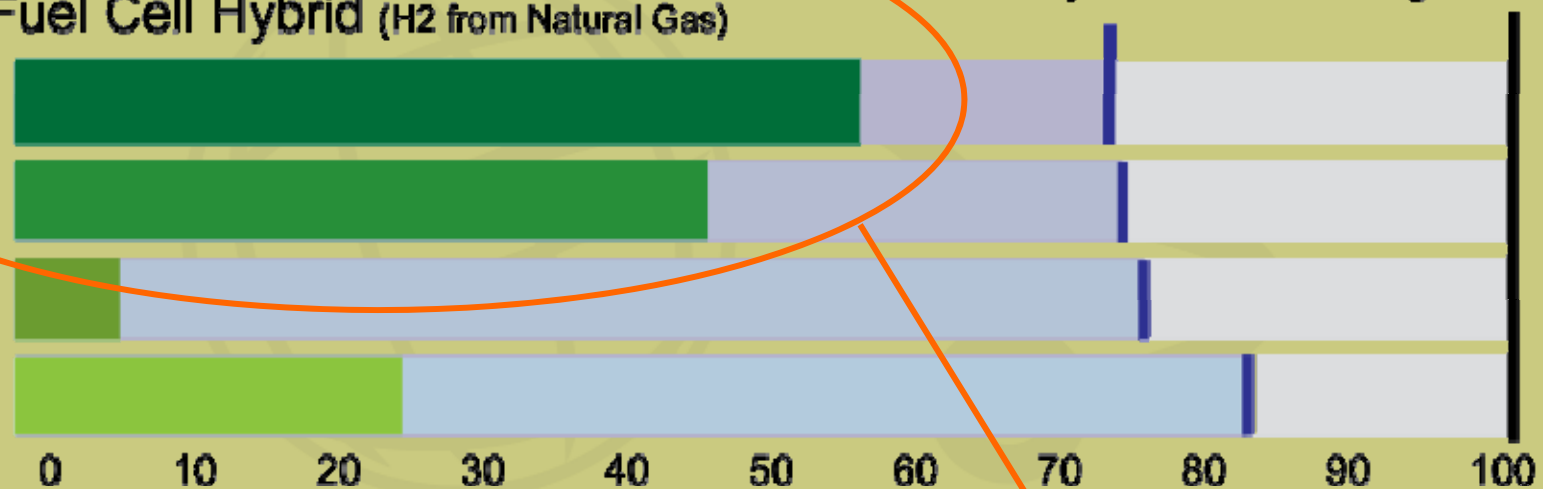
GHGs

NO<sub>x</sub>

VOCs

Average 2012  
hybrid car

Average 2012  
gasoline car



45 to 55% improvement compared to  
conventional vehicles

